Table of Contents

1.0	Intr	roduction	1-1
1.1	Pi	roposed Agency Action	1-1
1.2	Р	urpose for, and Benefits of, the Proposed Action	1-1
1.3	Pi	roject History and Scope of the EIS	1-3
1	.3.1	Public Participation	1-3
1	.3.2	Issues of Concern	1-4
2.0	De	scription of the Proposed Action and Alternatives	2- 1
2.1	Pi	roposed Action	2-1
2	.1.1	Continental Energy Services Proposed Generation Plant	2-2
2	.1.2	Proposed Natural Gas Transmission Pipeline Upgrade	2-30
2.2	Pi	roposed Action With Mitigation Measures Alternative	2-58
2	2.2.1	Generation Plant Construction and Operation Mitigation Measures	2-58
2	2.2.2	Pipeline Construction and Operation Mitigation Measures	2-60
2	2.2.3	Mitigation Meas. Expected to Be Required Under Separate Permitting Actions	2-64
2.3	N	o Action Alternative	2-64
2.4	Al	ternatives Considered but Eliminated from Detailed Study	2-65
2	.4.1	Generation Plant Alternatives Considered but Dismissed	2-65
2	.4.2	Pipeline Alternatives Considered but Dismissed	2-67
3.0	Aff	ected Environment	3-1
3.1	Lo	ocation and Climate	3-1
3	.1.1	Proposed Project Locations	3-1
3	.1.2	Study Area Locations	3-1
3	.1.3	Climate	3-2
3.2	La	and Use	3-3
3	.2.1	Generation Plant	3-3
3	.2.2	Natural Gas Pipeline	3-11
3.3	G	eology Resources	3-29
3	.3.1	Geo-Hazards	3-30
3	.3.2	Methods of Analysis for Geologic Hazards	3-31
3	.3.3	Inventory Results	3-31
3.4	S	pil Resources	3-39
3	.4.1	Generation Plant and LAD	3-39
3	.4.2	Natural Gas Pipeline	3-40

MONTANA DEQ I TABLE OF CONTENTS

3.5	W	ater Resources	3-44
3.	5.1	Generation Plant	3-44
3.	5.2	Natural Gas Pipeline	3-51
3.6	W	etland Resources	3-63
3.	6.1	Generation Plant	3-64
3.	6.2	Natural Gas Pipeline	3-64
3.7	Ve	egetation Resources	3-65
3.	7.1	Inventory Methods	3-65
3.	7.2	Vegetation Cover Types	3-66
3.	7.3	Generation Plant	3-68
3.	7.4	Natural Gas Pipeline	3-71
3.8	W	ildlife Resources	3-75
3.	8.1	Inventory Methods	3-75
3.	8.2	Special-Status Wildlife Species	3-76
3.	8.3	Raptors	3-80
3.	8.4	Game Species	3-81
3.	8.5	Generation Plant	3-82
3.	8.6	Natural Gas Pipeline	3-82
3.9	Fis	sheries Resources	3-89
3.	9.1	Inventory Methods	3-89
3.	9.2	Generation Plant	3-90
3.	9.3	Natural Gas Pipeline	3-97
3.10	Ai	r Resources	3-104
3.	10.1	Generation Plant	3-105
3.	10.2	Natural Gas Pipeline	3-106
3.11	No	pise	3-107
3.	11.1	Noise Terminology	3-107
3.	11.2	Noise Level Criteria	3-108
3.	11.3	Existing Ambient Noise Levels	3-109
3.12	Сι	ultural Resources	3-111
3.	12.1	Inventory Methods	3-111
3.	12.2	Generation Plant	3-112
3.	12.3	Natural Gas Pipeline	3-112
3.	12.4	Paleontological Studies	3-113
3.	12.5	Native American Site Consultation	3-113
3.13	Sc	ocioeconomic Resources	3-113
3.	13.1	Generation Plant	3-113

MONTANA DEQ II TABLE OF CONTENTS

3.13.2 Natural Gas Pipeline	3-114
3.14 Infrastructure	3-117
3.14.1 Transportation Systems	3-117
3.14.2 Utilities	3-119
3.14.3 Superfund Sites	3-120
4.0 Environmental Consequences	4-1
4.1 Location And Climate	4-1
4.2 Land Use	4-1
4.2.1 Effects of the Proposed Action	4-2
4.2.2 Effects Of The Mitigation Measure Alternative	4-15
4.2.3 Effects of the No Action Alternative	4-16
4.3 Geology Resources	4-16
4.3.1 Effects of the Proposed Action	4-17
4.3.2 Effects of the Alternative to the Proposed Action	4-17
4.3.3 Effects of the No Action Alternative4-	4-17
4.4 Soil Resources	4-17
4.4.1 Effects of the Proposed Action	4-19
4.4.2 Effects of the Mitigation Alternative	4-23
4.4.3 Effects of the No Action Alternative	4-23
4.5 Water Resources	4-23
4.5.1 Effects of the Proposed Action	4-24
4.5.2 Effects of the Proposed Action with Mitigation Measures Alterna	tive 4-37
4.5.3 No Action Alternative	4-38
4.6 Wetlands Resources	4-38
4.6.1 Effects of the Proposed Action to Wetlands	4-38
4.6.2 Effects of the Mitigation Alternative	4-44
4.6.3 Effects of the No Action Alternative	4-44
4.7 Vegetation Resources	4-45
4.7.1 Effects of the Proposed Action	4-45
4.7.2 Effects From the Mitigation Alternative	4-52
4.7.3 Effects of the No Action Alternative	4-53
4.8 Wildlife Resources	4-53
4.8.1 Effects of the Proposed Action	4-53
4.8.2 Effects from the Mitigation Alternative	4-62
4.8.3 No Action Alternative	4-63
4.9 Fisheries Resources	4-63

MONTANA DEQ III TABLE OF CONTENTS

6.1 Project Sponsors	6-1
6.0 Agency Consultation and Coordination	6-1
5.2 Comparison of Alternatives	5-1
5.1 Agency-Preferred Alternative	5-1
5.0 Comparison of the Environ. Consequences of the Alternatives	5-1
4.17 Irreversible and Irretrievable Commitment of Resources	4-144
4.16 Unavoidable Adverse Effects	4-144
4.15.4 Summary of Impacts	4-143
4.15.3 Infrastructure	4-141
4.15.2 Vegetation Resources	4-141
4.15.1 Water and Fisheries Resources	4-136
4.15 Cumulative Effects	4-136
4.14.2 Effects of the Proposed Action	4-129
4.14.1 Methods of Analysis	4-128
4.14 Infrastructure	4-128
4.13.3 Effects of the No Action Alternative	4-127
4.13.2 Effects of the Mitigation Alternative	4-126
4.13.1 Effects of the Proposed Action	4-120
4.13 Socioeconomics	4-118
4.12.3 Effects of the No Action Alternative	4-118
4.12.2 Effects From the Mitigation Alternative	4-118
4.12.1 Effects of the Proposed Action	4-114
4.12 Cultural Resources	4-114
4.11.3 Effects of the No Action Alternative	4-114
4.11.2 Effects of the Proposed Action with Mitigation Measures Alternative	4-114
4.11.1 Effects of the Proposed Action	4-110
4.11 Noise	4-109
4.10.5 Effects of the No Action Alternative	4-109
4.10.4 Effects From the Mitigation Alternative	4-108
4.10.3 Impact Summary to Air Resources from The Proposed Action	4-108
4.10.2 Effects from the Proposed Action - Natural Gas Pipeline	4-101
4.10.1 Effects from the Proposed Action – Generation Plant	4-87
4.10 Air Resources	4-86
4.9.3 Effects of the No Action Alternative	4-86
4.9.2 Effects From the Mitigation Alternative	4-84
4.9.1 Effects of the Proposed Action	4-64

MONTANA DEQ IV TABLE OF CONTENTS

6.2 Agency Contacts	6-2
7.0 Preparers and Contributors	7-1
8.0 Acronyms and Glossary	8-1
9.0 References	9-1
Index	
Figures	
Figure S-1 Proposed Project	S-1
Figure 1-1 Project Location	1-7
Figure 2-1 Generation Plant Location	2-3
Figure 2-2 Visual Simulation of the Generation Plant	2-5
Figure 2-3 Generation Plant Site Map (Plot Plan)	2-9
Figure 2-4 Conceptual Diagram of the Combined Cycle Process	2-11
Figure 2-5 Electrical Transmission Line Connection to ASiMI Subs	tation 2-17
Figure 2-6 Location Map of Water Supply System for the Generation	on Plant 2-21
Figure 2-7 Conceptual Diagram of the Generation Plant Water Bal	ance 2-23
Figure 2-8 Montana Power Natural Gas Pipeline Loop Locations	2-31
Figure 2-9 Typical Arrangement for Compressor Station	2-35
Figure 2-10 Photograph of Typical Compressor Station	2-37
Figure 2-11 Typical Construction Spread	2-40
Figure 2-12 Cross Section of Road Crossing	2-43
Figure 2-13 Typical bored and Casing Railroad Crossing	2-45
Figure 2-14 Pipeline Alternative Routes	2-69
Figure 3-1 Water Rights Claimants, Warm Springs Creek	3-5
Figure 3-2 Sensitive View Points	3-9
Figure 3-3 Geology, Generation Plant	3-33
Figure 3-4 Soils Resource Map, Generation Plant	3-41
Figure 3-5 Water Resource Map, Generation Plant	3-49
Figure 3-6 Vegetation Resource Map, Generation Plant	3-69
Figure 3-7 Wildlife Resource Map, Generation Plant	3-83
Figure 3-8 Special Status Species Resource Map	3-85
Figure 4-1 Predicted Deposition Rates for Ammonia, Nutrients, an	d Nitrogen Comp. 4-97

MONTANA DEQ V TABLE OF CONTENTS

Tables

Table S-1 Summary of Impact Severity for the Proposed Action and the Mitigation Alt.	S-7
Table 2-1 Proposed Pipeline Loops	2-34
Table 2-2 Pipeline Characteristics	2-34
Table 2-3 Pipeline Ground Disturbance	2-36
Table 2-4 Cover Standards	2-41
Table 2-5 Water Requirements for Hydrostatic Testing	2-42
Table 2-6 Pipeline Stream Crossing Timing Windows	2-46
Table 2-7 Summary of Mainline Expansion Alternatives	2-65
Table 3-1 Parcels Crossed by Property Tax Land Classification	3-12
Table 3-2 Land Ownership along the Gas Pipeline (miles)	3-13
Table 3-3 Non-irrigated Pasture/Rangeland and Agricultural Land (Cropland) Crossed by Pipeline - Morel Tap	Gas 3-13
Table 3-4 Montana State Trust Land Crossed by Gas Pipeline - Morel Tap	3-14
Table 3-5 Non-irrigated Pasture/Rangeland and Agricultural Land (Cropland) Crossed by Pipeline-Silver City Loop	Gas 3-16
Table 3-6 Non-irrigated Pasture/Rangeland and Agricultural Land (Cropland) Crossed by Pipeline - Wolf Creek Loop	Gas 3-17
Table 3-7 Montana State Trust Land Crossed by Gas Pipeline – Wolf Creek Loop	3-17
Table 3-8 Non-irrigated Pasture/Rangeland and Agricultural Land (Cropland) Crossed by Pipeline-Choteau Loop	Gas 3-19
Table 3-9 Montana State Trust Land Crossed by Gas Pipeline - Choteau Loop	3-21
Table 3-10 Average Angler Use During 1990s (by number of anglers)	3-25
Table 3-11 Angler Use (by angler numbers)	3-25
Table 3-12 Earthquake Intensity Scale	3-30
Table 3-13 MPC Morel Loop Pipeline Project, Wetland Inventory (USFWS National Wetla Inventory Classification)	nd 3-52
Table 3-17 TMDL Streams	3-60
Table 3-18 Wetland Acreage Summary by Pipeline Loops	3-64
Table 3-19 Special-status plant species within the project area	3-68
Table 3-20 Vegetation Cover Types – Generation Plant	3-71
Table 3-21 Vegetation Cover Types – Morel Tap	3-72
Table 3-22 Vegetation Cover Types – Silver City Loop & Mainline #4 Compressor Station	3-72
Table 3-23 Vegetation Cover Types – Wolf Creek Loop & Mainline #3 Compressor Station	n 3-73
Table 3-24 Vegetation Cover Types – Choteau Loop	3-74
Table 3-25 Special Status Species Potentially In The Study Area	3-77
Table 3-26 Raptor seasonal use of the study area	3-80
Table 3-27 Special-Status Fish Species	3-89

MONTANA DEQ VI TABLE OF CONTENTS

Table 3-28 Estimated Average Instream Flows Below Meyers Dam	3-90
Table 3-29 Natural Watercourses and Fish Species on the Pipeline Route	3-96
Table 3-30 Butte-Silver Bow County Maximum Allowable Noise Levels	3-106
Table 3-31 Measured Ambient Noise Levels Near Receptor Locations	3-108
Table 3-32 Demographic Characteristics	3-114
Table 3-33 Major Transportation Facilities Crossed by Gas Pipeline - Morel Tap	3-116
Table 3-34 Major Transportation Facilities Crossed by Gas Pipeline Wolf Creek Loop	3-116
Table 3-35 Major Transportation Facilities Crossed by Gas Pipeline - Choteau Loop	3-117
Table 4-1 Amount of Grazing and Cropland Affected by Pipeline Construction	4-6
Table 4-2 Viewpoints Identified Adjacent to MPC Pipeline	4-11
Table 4-3 Summary of Impacts	4-14
Table 4-4 Disturbed Acres/Percentages by Pipeline Loops, Reclamation Potential, and So Type	il 4-21
Table 4-5 Summary of Impacts from The Proposed Action	4-23
Table 4-6 Summary of Impacts from The Proposed Action	4-37
Table 4-7 Summary of Impacts from The Mitigation Alternative	4-37
Table 4-8 Impacts to Wetlands From the Proposed Action	4-44
Table 4-9 Vegetation Impact Classification	4-45
Table 4-10 Special-Status Plant Species within the Project Area	4-46
Table 4-11 Summary of Impacts to Vegetation from the Proposed Generation Plant	4-48
Table 4-12 Summary of Impacts to Vegetation for the Proposed Pipeline Project	4-50
Table 4-13 Proposed Vegetation Mitigation - Generation Plant	4-52
Table 4-14 Proposed Vegetation Mitigation – Gas Pipeline	4-52
Table 4-15 Special-Status Species Habitat Disturbance	4-55
Table 4-16 Big Game Habitat Disturbance	4-55
Table 4-17 Summary of Impacts to Wildlife from the Proposed Action – Generation Plant	4-57
Table 4-18 Wildlife Impacts – Gas Pipeline	4-61
Table 4-19 Proposed Wildlife Mitigation – Gas Pipeline	4-62
Table 4-20 Direct Flow Water Rights from Silver Lake	4-67
Table 4-21 Warm Springs Creek Flow Rates	4-68
Table 4-22 Years with Average Flows (cfs) per Month At or Below 16 cfs Without / With C Diversion	ES 4-68
Table 4-23 Summary of Impacts to Fish in Lower Warm Springs Creek	4-69
Table 4-24 Summary of Impact Levels from Open-Cut Trenchings	4-72
Table 4-25 Summary of Impacts to Fisheries from the Pipeline Portion of the Prop. Action	4-77
Table 4-26 Average Monthly Streamflow (cfs) – Dearborn River	4-81
Table 4-27 Proposed Fishery Mitigation – Generation Plant	4-84
Table 4-28 Proposed Fishery Mitigation – Gas Pipeline	4-85

MONTANA DEQ VII TABLE OF CONTENTS

Table 4-29 Turbine Stack and Cooling Tower Design Parameters	4-89
Table 4-30 Generation Plant Emission Rates	4-89
Table 4-31 Generation Plant Modeling Results, Maximum Concentrations	4-90
Table 4-32 PM ₁₀ Class II PSD Increment Modeling Results	4-92
Table 4-33 NO _x Class II PSD Increment Modeling Results	4-92
Table 4-34 PM ₁₀ Class I PSD Increment Modeling Results for Anaconda – Pintler Wild.	4-93
Table 4-35 NO _x Class I PSD Increment Modeling Results for Anaconda – Pintler Wild.	4-93
Table 4-36 Class I PSD Increment for Yellowstone National Park	4-93
Table 4-37 Potential Visibility Impacts at Yellowstone National Park	4-94
Table 4-38 Class I Visibility Impact Analysis at Anaconda – Pintler Wilderness	4-94
Table 4-39 PM ₁₀ Nonattainment Modeling Results	4-95
Table 4-40 Cooling Tower Stack Design Parameters	4-99
Table 4-41 Salt Deposition Results	4-99
Table 4-42 Generation Plant Estimated Greenhouse Gases Emissions	4-100
Table 4-43 Generation Plant Estimated Global Warming Impact	4-101
Table 4-44 Emission Rates for Mainline #4 Compressor Station	4-103
Table 4-45 NO _x Emissions Analysis for Mainline #4 Compressor Station	4-103
Table 4-46: Greenhouse Gas Emission Rates for Mainline #4 Compressor Station	4-104
Table 4-47 Emission Rate Changes at Mainline #3 Compressor Station	4-105
Table 4-48 NO _x Emissions Analysis for Mainline #3 Compressor Station	4-105
Table 4-49 Greenhouse Gas Emission Rates for Mainline # 3 Compressor Station	4-106
Table 4-50 Emission Rate Changes at Mainline #1 Compressor Station	4-107
Table 4-51 Greenhouse Gas Emission Rates for Mainline #1 Compressor Station	4-108
Table 4-52 Summary of Impacts from The Proposed Action	4-108
Table 4-53 Predicted Generation Plant Noise Levels	4-111
Table 4-54 Summary of Impacts from The Proposed Action	4-113
Table 4-55 Potentially Disturbed Historic Sites, Generation Plant	4-115
Table 4-56 Summary of Impacts to Historic Districts, Generation Plant	4-115
Table 4-57 Potentially Disturbed Historic Sites, Pipeline	4-116
Table 4-58 Summary of Impacts to Historic Districts, Pipeline	4-117
Table 4-59 Cultural Resources: Summary of Impacts from The Proposed Action	4-118
Table 4-60 Summary of Social and Economic Benefits and Costs of the Project	4-126
Table 4-61 Summary of Impacts from The Proposed Action	4-134
Table 4-62 Median of Average Monthly cfs Without / and With CES Diversion ¹	4-137
Table 4-63 Years with Ave. Flows (cfs) per Month at/or Below 16 cfs without/with CES Di	v.4-138
Table 4-64 Median of Average Monthly cfs Without/With CES Diversion	4-139
Table 4-65 Years with Ave. Flows (cfs) per Month at/or below 16 cfs without/with CES Div	v.4-140

MONTANA DEQ VIII TABLE OF CONTENTS

Table 4-66 Energy Projects That Have Applied For Transmission on the MPC Grid	4-143
Table 4-67 Summary of Impacts from The Proposed Action and Mitigation Alternative	4-144
Table 5-1 Comparison Proposed Action and the Mitigation Alternative Impacts	5-3

MONTANA DEQ IX TABLE OF CONTENTS

MONTANA DEQ X TABLE OF CONTENTS